

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant	Achilefu et al.
Serial No.	10/800,531
Filing Date	March 15, 2004
Examiner	Jones
Group Art Unit	1618
Confirmation No.	2309
Title	RECEPTOR-AVID EXOGENOUS OPTICAL CONTRAST AND THERAPEUTIC AGENTS
Attorney Docket No.	MRD 64CP

Cincinnati OH 45202

July 9, 2007

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

**SUPPLEMENTAL ELECTION**

Responsive to the June 7, 2007 Communication in the referenced application, Applicants respond as follows.

Regarding the Examiner's request to elect an organic solvent, Applicants elect dimethylsulfoxide (DMSO).

Regarding the Examiner's request to elect a dye, Applicants' April 9, 2007 Election and Preliminary Amendment elected Group 52 (claims 32-35). These claims recite a method to enhance fluorescence of dye administered for a photodiagnostic or phototherapeutic procedure by adding a biocompatible organic solvent at the recited concentrations. The method is independent of the particular dye, supported at least at p. 22 of the specification:

This invention is also related to the method of preventing fluorescence quenching. It is known that cyanine dyes generally form aggregates in aqueous media, leading to fluorescence quenching. Where the presence of a hydrophobic core in the dyes leads to fluorescence quenching, the addition of a biocompatible organic solvent, such as 1-50% dimethylsulfoxide (DMSO) for example, restored fluorescence by preventing aggregation and allowed *in vivo* organ visualization. Large fluorescence enhancement of dyes have been observed under the condition where the dye is encapsulated in, i.e. forms an inclusion complex with, cyclodextrins (W.R. Bergmark et al.,

Dramatic fluorescence effects for coumarin laser dyes coincided with organic solvents in cyclodextrins. *J. Phys. Chem.*, 1990, 94, 5020-5022). However, in vivo fluorescence enhancement of dyes coinjected with biocompatible organic solvents has not been previously described. Suitable organic solvent include, but are not limited to dimethylsulfoxide (DMSO), ethyl alcohol, isopropyl alcohol, glycerol, and other biocompatible polyols such as sorbitol, mannitol, xylitol, lactitol, erythritol, polydextrose, sucrose, fructose, maltose, hydrogenated starch hydrolysate (HSH); isomalt (palitinit); polyglycerol, hyperbranched polyglycerol, acetylated polyols, maltodextrine, cyclodextrine, dianhydrosorbitol; starches; polysaccharides; as known to one skilled in the art. (emphasis added)

The Examiner's own claim grouping did not require such an election. Specifically, the Examiner characterized the grouping of claims 32-35 as follows:

Group (52). Claims 32-35 drawn to a method of enhancing fluorescence as set forth in independent claim 32 where the dye is other than [sic] that of formulae 1, 2, 3, and 4, classified in class 548, subclass 400+ (emphasis added).

Further, each of the Examiner's other 131 claim groups, except group 52, recited specific chemical substituents for the dye.

Thus, Applicants traverse the Examiner's assertion that the April 9, 2007 Election was not fully response because "Applicant did not elect a single disclosed dye species for initial search purposes." Applicants have cited evidence in support of their position, and have made a *bona fide* response. If the Examiner disagrees, Applicant requests further clarification.

No fees other are believed due but, if deemed necessary, the Examiner is authorized to charge them to Deposit Account No. 23-3000.

The Examiner is invited to contact Applicants' undersigned representative with questions.

Respectfully submitted,

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